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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/055,989	01/28/2002	Matthias Rebellius	Q67989	2124

7590 09/27/2004

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EXAMINER	
AUVE, GLENN ALLEN	
ART UNIT	PAPER NUMBER
2111	

DATE MAILED: 09/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/055,989	REBELLIUS ET AL.	
	Examiner	Art Unit	
	Glenn A. Auve	2111	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 July 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14 and 16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14 and 16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 8-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 8 is rejected based on lack of positive antecedent basis of "said integrated USB panel hubs" since only a single one was previously recited.

Claim 9 is rejected because it depends on claim 8. Claim 9 is also rejected based on lack of positive antecedent basis of "said integrated USB panel hubs" since only a single one was previously recited.

Claim 10 is rejected based on lack of positive antecedent basis of "said integrated USB panel hubs" on lines 7-8 since only a single one was previously recited.

Claims 11-13 are rejected because they depend on claim 10.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various

claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1-14 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over the USB Specification in view of "USB Eases Data Acquisition", *Test & Measurement World*, May 1998 by Bassak (cited by applicant).

As per claim 1, the USB spec shows an industrial control unit operable to control one or more USB devices (page 23, fig. 4-4 PC); one or more industrial control panels operable to communicate with the industrial control unit as USB devices (monitor); a main USB hub connected to the industrial control panels (fig.4-4 wherein the PC has an integrated host/hub, and see also section 4.8.2.1 which explains that hubs are used to enable the attachment of multiple devices to a single port); and a communication link connecting the industrial control unit to the industrial control panels and operable to facilitate communication therebetween (USB link connecting the host/hub to the monitor/hub), wherein each of the industrial control panels comprises a plurality of functional units each with a respective USB controller and an integrated USB panel hub to interconnect the USB controllers to their functional units (fig.4-4, wherein the other functional units are connected via USB interfaces to the USB hub in the monitor unit and the control unit and control panel are connected via the communication link). The USB spec does not specifically show that the USB devices are in an industrial plant. However, Bassak shows that it is desirable to use USB devices in a data acquisition/industrial plant environment because "[t]he USB embodies a rich set of convenient features, in particular the capacity for hot-swap, plug-and-play operation; a 30-m range; and an expansion capacity of 127 devices"

(second paragraph of the article). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use a USB system as shown by the USB spec in an industrial plant as shown by Bassak for the reasons stated above.

As for claim 2, the argument for claim 1 applies. The USB spec also shows that the industrial control unit comprises a USB interface and the communication link is a USB line connected to the USB interface (fig.4-4).

As for claim 3, the argument for claim 1 applies. The USB spec also shows that the functional units are input and output components (fig. 4-4).

As for claim 4, the argument for claim 3 applies. The USB spec also shows that the functional units are selected from a group consisting of a keyboard, touch screen input, status display, a key display, a touch pad, a roller ball and a piezo pad (fig. 4-4, which shows at least a keyboard).

As for claim 5, the argument for claim 1 applies. The USB spec also shows that the functional units comprise a communication interface operable to connect additional control devices and output devices (fig. 4-4, the USB hub/functions).

As for claim 6, the argument for claim 1 applies. The Bassak also shows a line length of the communication link is greater than 5 meters (second paragraph of the article as noted above).

As for claim 7, the argument for claim 1 applies. The USB spec also shows that the USB hub is connected to the control unit via a two-wire connection (inherent in USB).

As for claim 8, the argument for claim 1 applies. As noted above claims 8 and 9 are rejected under 35 USC §112,2nd paragraph because they recite a plurality of panel hubs when only a single one was previously recited. Therefore claims 8 and 9 are being interpreted as though they recited a single such hub. However, there can be many hubs in a single system so

even if there were more than one panel hub recited such a limitation would still be covered by the prior art. The USB spec also shows that the integrated USB panel hub is connected to the functional units of the control panels via respective USB panel lines, and connected to the industrial control unit via a dedicated USB control unit line (figs.4-4 and 4-3, wherein in a USB system a hub is used to couple more than one device to a single one of a control unit's USB ports via a single dedicated line).

As for claim 9, the argument for claim 8 applies. The USB spec also shows that the integrated USB panel hub is physically integrated into the control panels (fig. 4-4).

As for claim 16, the argument for claim 1 applies. The USB spec also shows that the industrial control unit and the main USB hub are connected via a single cable (figs. 4-4 and 4-3).

As per claim 10, the USB spec shows one or more control panels each comprising a plurality of functional units each associated with a respective USB controller; and an integrated USB hub operable to interconnect the USB controllers of the functional units wherein the industrial control panel is connected to a secondary device via a communication link operably connected to the hub (fig.4-4); and an external USB hub operably connected to each of the control panels via the respective integrated USB hub (figs. 4-4 and 4-3 wherein in a USB system a hub is used to couple more than one device to a single one of a control unit's USB ports via a single dedicated line). The USB spec does not specifically show that the USB devices are in an industrial plant. However, Bassak shows that it is desirable to use USB devices in a data acquisition/industrial plant environment because "[t]he USB embodies a rich set of convenient features, in particular the capacity for hot-swap, plug-and-play operation; a 30-m range; and an expansion capacity of 127 devices" (second paragraph of the article). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the

invention to use a USB system as shown by the USB spec in an industrial plant as shown by Bassak for the reasons stated above.

As for claim 11, the argument for claim 10 applies. The USB spec also shows that one or more of the functional units are input and output components (fig. 4-4).

As for claim 12, the argument for claim 11 applies. The USB spec also shows that the functional units are selected from a group consisting of a keyboard, touch screen input, status display, a key display, a touch pad, a roller ball and a piezo pad (fig. 4-4 shows at least a keyboard).

As for claim 13, the argument for claim 10 applies. The USB spec also shows that the functional units comprise a communication interface operable to connect additional control devices and output devices (fig. 4-4).

As per claim 14, the USB spec shows providing an industrial control unit operable to control one or more USB devices (PC host/hub); providing one or more industrial control panels as the USB devices and comprising a plurality of function units each having a respective USB controller (monitor hub); and operably connecting the control unit to each of the functional units via a USB hub integrated within each of the industrial control panels and having a panel connection with a corresponding connection of each functional unit and a control unit connection for sending or receiving control signals to the control unit via an external USB hub that is operably connected to the industrial control panels and to the industrial control unit (figs.4-4 and 4-3, wherein the hub in the monitor is connected to the host control unit via a USB line and the hub is coupled to the functional units via panel connections, and also wherein in a USB system a hub is used to couple more than one device to a single one of a control unit's USB ports via a single dedicated line, these hubs may be either integrated into a device or may be stand alone devices). The USB spec does not specifically show that the USB devices are in an industrial

plant. However, Bassak shows that it is desirable to use USB devices in a data acquisition/industrial plant environment because "[t]he USB embodies a rich set of convenient features, in particular the capacity for hot-swap, plug-and-play operation; a 30-m range; and an expansion capacity of 127 devices" (second paragraph of the article). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use a USB system as shown by the USB spec in an industrial plant as shown by Bassak for the reasons stated above.

Response to Arguments

6. Applicant's arguments filed July 26, 2004, have been fully considered but they are not persuasive. Applicant argues that the prior art fails to teach the claimed integrated USB hubs within the respective control panels and the dedicated external USB hub that connects the control panels to the control unit.

With respect to applicant's first argument, the USB spec clearly shows integrating a USB hub within a USB device, for example the monitor shown in fig. 4-4. Since applicant's claims recite "one or more" control panels all that is required is one. However, even if applicant were to amend the claims to recite a plurality of such panels the claims would still be rejected using the same art as multiple devices can be coupled to a single control unit or PC USB port using any combination of hubs (either integrated hubs or stand alone hubs) as necessary up to 127 devices. Therefore applicant's argument is not persuasive.

With respect to applicant's second argument, claim 1 only recites "a main USB hub connected to the industrial control panels". There is no requirement that it be a dedicated external USB hub. Therefore with regard to claim 1, this argument is not at all persuasive. Claims 10 and 14 do recite an external USB hub. However the USB spec shows that hubs can

be dedicated stand alone devices used to enable more than one USB device to couple to a single USB port (see at least section 4.8.2.1). Therefore this argument is also not persuasive.

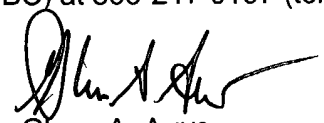
Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The *Desktop Engineering* article shows that the use of PC's in industrial control applications is known.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Glenn A. Auve whose telephone number is (703) 305-9638. After October 13, 2004, the examiner's telephone number will change to (571) 272-3623. The examiner can normally be reached on M-F 8:00 AM-5:30 PM, every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Rinehart can be reached on (703) 305-4815. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Glenn A. Auve
Primary Examiner
Art Unit 2111

gaa
September 22, 2004